

**Temporary Covered Source Permit No. 0691-02-CT**

**Application No.:** Application for renewal no. 0691-04

**Organization Name:** MEI Corporation

**Equipment Location:** Various Temporary Locations  
Initial Saddle Road (between Mile Posts 12 – 20)  
Location: Hilo, Hawaii 96720  
UTM: 259,550 m E; 2,178,216 m N NAD-83 Zone 5

**Responsible Official:** Mr. Kivalu Ramanlal  
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**SIC Code:** 1429 Crushed and Broken Stone, Not Elsewhere Classified

**Proposed Project:**

The facility consists of a 340 tons per hour self-propelled portable mobile crusher.

The existing permitted diesel engine will be removed from the permit since it propels the crushers and is exempt pursuant to HAR §11-60.1-82(d)(4), which exempts internal combustion engines propelling mobile sources.

The operating limit of 2,080 hours per rolling twelve (12) month period was removed due to the exemption of the diesel engine from the permit.

**Equipment:**

340 ton per hour Extec C-12 Mobile Jaw Crusher, Serial no. 9966, Manufacture date 2006.

**Air Pollution Control:**

The crusher is equipped with a water tank, water sprays at the jaw and conveyor for dust control, and water trucks/water sprays to control onsite fugitive dust from plant operations, material transfer points, stockpiles, and plant roads.

**Applicable Requirements:**

Applicable Hawaii Administrative Rules (HAR):

- Chapter 11-59, Ambient Air Quality Standards
- Chapter 11-60.1 Air Pollution Control
  - Subchapter 1, General Requirements
  - Subchapter 2, General Prohibitions
    - 11-60.1-31 Applicability
    - 11-60.1-32 Visible Emissions
    - 11-60.1-33 Fugitive Dust
  - Subchapter 5, Covered Sources
  - Subchapter 6, Fees for Covered Sources, Noncovered Sources, and Agricultural Burning
    - 11-60.1-111 Definitions
    - 11-60.1-112 General Fee Provisions for Covered Sources
    - 11-60.1-113 Application Fees for Covered Sources
    - 11-60.1-114 Annual Fees for Covered Sources
  - Subchapter 8, Standards of Performance for Stationary Sources
    - 11-60.1-161 New Source Performance Standards
  - Subchapter 10, Field Citations

Standard of Performance for New Stationary Sources (NSPS), 40 Code of Federal Regulations (CFR) Part 60

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants is applicable to the crushing plant because the maximum capacity of the plant is greater than 150 tons per hour, and the plant was manufactured after August 31, 1983. Equipment that commences construction, modification, or reconstruction on or after April 22, 2008, have more stringent fugitive emission opacity limits.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines is not applicable to the diesel engine because the engine is considered nonroad engines as defined in 40 CFR §1068.30. Subpart IIII applies to stationary internal combustion engines (ICE) that are not nonroad engines.

National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61  
This source is not subject to NESHAPs because there are no standards in 40 CFR Part 61 applicable to this facility.

NESHAPs for Source Categories (Maximum Achievable Control Technology (MACT)), 40 CFR Part 63

Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) is not applicable to the diesel engine because the engine is considered nonroad engine as defined in 40 CFR §1068.30. Subpart ZZZZ applies to stationary internal combustion engines that are not nonroad engines.

Prevention of Significant Deterioration (PSD), 40 CFR Part 52, §52.21  
This source is not subject to PSD requirements because it is not a major stationary source as defined in 40 CFR §52.21 and HAR, Title 11, Chapter 60.1, Subchapter 7.

Compliance Assurance Monitoring (CAM), 40 CFR 64

This source is not subject to CAM because the facility is not a major source. The purpose of CAM is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 CFR Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are 100% of the major source level; and (5) not otherwise be exempt from CAM.

Air Emissions Reporting Requirements (AERR), 40 CFR Part 51, Subpart A

AERR is not applicable because potential emissions from the facility do not exceed AERR thresholds.

DOH In-house Annual Emissions Reporting

The Clean Air Branch requests annual emissions reporting from those facilities that have facility wide emissions exceeding in-house reporting levels and for all covered sources. Annual emissions reporting will be required because this facility is a covered source.

Best Available Control Technology (BACT)

This source is not subject to BACT analysis because potential emissions are below significant levels. BACT analysis is required for new sources or modifications to sources that have the potential to emit or increase emissions above significant levels considering any limitations as defined in HAR, §11-60.1-1.

Synthetic Minor Source

A synthetic minor source is a facility that is potentially major, as defined in HAR, §11-60.1-1, but is made non-major through federally enforceable permit conditions. This facility is not a synthetic minor source because potential emissions do not exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

**Exempt Equipment:**

The 350 HP CAT C-9 diesel engine on the self-propelled mobile rock crusher is exempt pursuant to Hawaii Administrative rules § 11-60.1-682(d)(4) which exempts ICE propelling mobile sources.

**Alternative Operating Scenarios:**

The applicant did not propose any alternate operating scenarios.

**Project Emissions:**

**Fugitive Dust PM Emissions from Stone Processing**

PM	Capacity (ton/hour)	EF (lb/ton)	Emissions (lb/hr)	Emissions (TPY)
				8,760 hr/yr
Truck Unloading	340	3.14E-05	0.01	0.05
Primary Jaw Crusher	340	1.20E-03	0.41	1.79
Conveyor Transfer Points (3x)	340	1.40E-04	0.14	0.63
Truck Loading	340	1.96E-04	0.07	0.29
Total PM				2.75

**Fugitive Dust PM<sub>10</sub> Emissions from Stone Processing**  
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**Fugitive Dust PM<sub>2.5</sub> Emissions from Stone Processing**

PM-2.5	Capacity (ton/hour)	EF (lb/ton)	Emissions (lb/hr)	Emissions (TPY) 8,760 hr/yr
Truck Unloading	340	4.71E-06	0.00	0.01
Primary Jaw Crusher	340	1.00E-04	0.03	0.15
Conveyor Transfer Points (3x)	340	1.30E-05	0.01	0.06
Truck Loading	340	2.94E-05	0.01	0.04
Total PM-2.5				0.26

**Fugitive Dust Emissions from Storage Piles**

Pollutant	EF (lb/ton)	Control Efficiency	Emissions (lb/hr)	Emissions (TPY) 8,760 hr/yr
PM	7.13E-03	70%	0.73	3.18
PM-10	3.37E-03	70%	0.34	1.51
PM-2.5	5.10E-04	70%	0.05	0.23

<sup>a</sup> PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emission factors for storage piles are based on AP42 Section 13.2.4 Aggregate Handling and Storage Piles equation (1), (11/06):

(1)  $E = k(0.0032)[(U/5)^{1.3}/(M/2)^{1.4}]$

	<30	<10	<2.5
k particle size multiplier, dimensionless	0.74	0.35	0.053
U mean wind speed, mph	15	15	15
M material moisture content, %	2.525	2.525	2.525
E emission factor, lb/ton	7.13E-03	3.37E-03	5.10E-04

Tons of material processed per year:

340 tons/hr x 8,760 hrs of operation/yr = 2,978,400 tons of material processed per year

Ton/yr emissions = E x tons of material processed per year 2,000 lbs/ton

**Greenhouse Gas (GHG) Emissions**

There are no GHG emissions because emissions from the crushing plant are fugitive in nature.

**Total Facility Emissions and Trigger Levels (TPY)**

Pollutant	Emissions (No Limits)	BACT Significant Levels	AERR Thresholds	DOH Levels	Storage Pile Wind Erosion
CO	0	100	1000	250	0
NO <sub>x</sub>	0	40	100	25	0
SO <sub>2</sub>	0	40	100	25	0

## PROPOSED

PM	2.75	25	-	25	3.18
PM-10	1.18	15	100	25	1.51
PM-2.5	0.26	10	100	-	0.23
VOC	0	40	100	25	0
HAPs	0	-	-	5	0

### Air Quality Assessment:

An ambient air quality impact analysis (AAQIA) is not required for the proposed crushing plant because emissions are fugitive in nature. The Department of Health air modeling guidance generally does not require an ambient air quality impact analysis for fugitive emissions.

### Significant Permit Conditions

1. Condition: The permittee shall not cause to be discharged into the atmosphere from the crusher, fugitive emissions which exhibit greater than fifteen (15) percent opacity.

NSPS opacity limit for affected facilities that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008. The crusher was manufactured in 2006.

2. Condition: The permittee shall not cause to be discharged into the atmosphere from any transfer point on the belt conveyors or from any other affected facility, fugitive emissions which exhibit greater than ten (10) percent opacity.

NSPS opacity limit for affected facilities that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008. The crusher was manufactured in 2006.

### Conclusion

MEI Corporation has submitted a permit application for renewal to operate a 340 TPH mobile crusher. Water sprays will be used to control fugitive emissions. Potential emissions were based on the maximum rated capacities of the equipment. Recommend issuance of the covered source permit subject to the incorporation of the significant permit conditions, thirty day (30-day) public comment period, and forty-five day (45-day) Environmental Protection Agency review period.

Joseph Baumgartner  
May 8, 2015